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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/824,278

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EXAMINER

RICE, ELISA M

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/824,278

Applicant(s)

NAKAJIMA ET AL.

Examiner

Elisa M. Rice

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claim 11 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 11 defines a a computer program embodying functional descriptive material. However, the claim does not define a computer-readable medium or computer-readable memory and is thus non-statutory

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for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). The scope of the presently claimed invention encompasses products that are not necessarily computer readable, and thus NOT able to impart any functionality of the recited program. The examiner suggests amending the claim(s) to embody the program on "computer-readable medium" or equivalent; assuming the specification does NOT define the computer readable medium as a "signal", "carrier wave", or "transmission medium" which are deemed non-statutory (refer to "note" below). Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters (US 5,715,334).

Regarding claim 1, 6 and 11, Peters discloses an image-processing method for applying a predetermined image processing to image signals, representing a plurality of pixels included in an image, so as to output processed image signals, comprising the steps of: applying a first processing for increasing a signal intensity deviation (column 15, line 40-45) to a first-objective pixel, which is included in objective pixels having a spatial frequency in a range, and whose signal intensity deviation is in a range of 30-60% of a maximum signal intensity deviation ("40%","60%", column 37, line 10); and applying a second processing for decreasing said signal intensity deviation (column 14, line 45) or keeping said signal intensity deviation as it is to a second-objective pixel, which is included in objective pixels having a spatial frequency in a range, and whose signal intensity deviation is in a range of 0-6% of said maximum signal intensity deviation ("1-10%", col. 21; "6%", col. 22, line 42; col. 22, line 60,).

Peters does not disclose specific spatial ranges for the first and second processing, but it would have been obvious to try varying ranges to achieve optimal performance.

Regarding claim 2, 7, and 12, Peters discloses the image-processing method of claim 1, wherein said first processing includes a sharpness-enhancement processing ("contrast enhancement", column 15, line 42), while said second processing includes a noise-reduction processing ("finally, disturbing noise may be reduced", column 15, line 45).

Regarding claim 3, 8, and 13, Peters discloses the image-processing method of claim 1, wherein said first processing multiplies said signal intensity deviation of said first-objective pixel by a weighting factor in a range. While Peters does not specifically state the weighting factors of 1.1 to 1.5, it would have been obvious to try varying ranges to achieve optimal performance.

Regarding claim 4, 9, and 14, The image-processing method of claim 1, wherein said second processing multiplies said signal intensity deviation of said second-objective pixel by a factor in a range of 0-0.75 (column 22, lines 35).

Regarding claim 5, 10, 15, Peters does not disclose the image-processing method of claim 1, further comprising the step of: converting objective image signals, representing said objective pixels, to luminance signals and color-difference signals; wherein said first processing is applied to said luminance signals in said step of applying said first processing, while said second processing is applied to said color-difference signals in said step of applying said second processing.

It teaches converting objective image signals, representing said objective pixels, to luminance signals and color-difference signals; wherein said first processing is applied to said luminance signals in said step of applying said first processing, while said

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second processing is applied to said color-difference signals in said step of applying said second processing (column 17, line 5-15).

It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the invention of Peters to apply sharpness enhancement to the luminance signals and noise-processing to the color signals because "by emphasizing the above-mentioned luminance high-frequency component signal, sharpness in fine structure areas such as hairs of a photographic object is enhanced, and by suppressing the above-mentioned color information high-frequency component signal, a noise looking like a color deviation is suppressed" (Ito, column 17, line 5-15).

Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters (US 5,715,334) and Ishida et al. (US 4,346,409).

Regarding claim 16, Peters discloses all the limitations in this claim with the exception of recording onto a recording medium.

Ishida teaches recording onto a recording medium (abstract).

It would have been obvious to one of ordinary skill in the art to modify the invention of Peters to include recording onto a recording medium for purposes of saving a copy (column 1, line 14-20).

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Regarding claim 17, the combination of Peters and Ishida discloses the image-recording apparatus of claim 16, wherein said first processing includes a sharpness-enhancement processing, while said second processing includes a noise-reduction processing (see claim 2 rejection).

Regarding claim 18, the combination of Peters and Ishida discloses the image-recording apparatus of claim 16, wherein said first processing section multiplies said signal intensity deviation of said first-objective pixel by a factor in a range of 1.1-1.5 (see claim 3 rejection).

Regarding claim 19, the combination of Peters and Ishida discloses the image-recording apparatus of claim 16, wherein said second processing section multiplies said signal intensity deviation of said second-objective pixel by a factor in a range of 0-0.75 (see claim 4 rejection).

Regarding claim 20, the combination of Peters and Ishida discloses the image-recording apparatus of claim 16, wherein said image-processing section further comprises: a converting section to convert objective image signals, representing said objective pixels, to luminance signals and color-difference signals; and wherein said first processing section applies said first processing to said luminance signals, while said

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second processing section applies said second processing to said color-difference signals(see claim 5 rejection).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elisa M. Rice whose telephone number is (571)270-1582. The examiner can normally be reached on 8:00a.m.-5:30p.m. EST Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian P. Werner can be reached on (571)272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



BRIAN WERNER
SUPERVISORY PATENT EXAMINER

Elisa Rice *ER*
Patent Examiner
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EMR